wind produced by the whirling. The dew-point of the air in which the thermometer is whirled is about as far below the temperature of the wet bulb as this is below the temperature of the dry bulb, if the latter has been similarly whirled and read rapidly. These two thermometers may be hung side by side on a short piece of string for convenience in whirling and are then called the sling psychrometer. On account of its convenience and portability, the sling psychrometer replaces the most delicate dew-point apparatus in all ordinary meteorological work. Mr. Kaufman submits the following problem:

Given the temperature of the air and of the dew-point with the height of the barometer, what does this mean in the light of our latest science? We have great trouble here in making good hay, so that this is a very practical matter.

We understand our correspondent's question to be a purely practical one. What bearing has the temperature, moisture, and pressure of the air upon practical farming operations, especially hay making? Can not some observer at a State agricultural college or experiment station answer this question?

THE WEATHER BUREAU AND THE UNIVERSITIES AND COLLEGES.

Again we have to chronicle the encouragement given by the colleges to the intellectual and educational side of the work of the Weather Bureau. Mr. D. J. Herndon, observer at Lexington, K. Y., informs the Chief of the Weather Bureau that the authorities of the Kentucky State College will furnish free office quarters and space for instrumental exposures. A well-lighted room has been placed at the disposal of the Weather Bureau. * * * The college authorities will have all necessary changes and improvements made at their own expense.

Similar arrangements are now in force at the following institutions:

Baltimore, Md.—Johns Hopkins University.
Columbia, Mo.—State University, Agricultural College.
Ithaca, N. Y.—Cornell University, engineering building.
Knoxville, Tenn.—University of Tennessee.
Lincoln, Nebr.—University of Nebraska.
New Brunswick, N. J.—State Experiment station.
Northfield, Vt.—Norwich University.

In all these cases the Weather Bureau offers a full equivalent by way of lectures and teaching, weekly crop reports, monthly meteorological returns and daily forecasts. The union of the two brings about an increased attention on the part of the students to the study of meteorology and climatology, and makes them by so much the more intelligent and better citizens. Similar intimate union between the State universities and the many scientific divisions and bureaus of the Federal Government can but lead to important advantages on both sides.

CHINOOK AT HAVRE, MONT.

Mr. C. W. Ling, observer at Havre, Mont., sends a tracing of the thermograph record for December 18–20, from which it appears that the temperature fell steadily from 45° F., on the afternoon of December 18 to about 18° F., at about 6 a. m. December 19 (seventy-fifth meridian time). After rising slowly for over half an hour, in accordance with the regular diurnal variation the temperature took a sudden jump a little before 8 a. m., and within ten minutes rose from 24° to 44°. After a half hour of this high temperature, there was an equally sudden fall to 30°, and after an hour of this temperature, a precipitous rise back to 44°, where it remained until late in the afternoon. Mr. Ling says that—

We have here two pronounced chinooks within four hours of time; the first chinook was evidently shut off for a few hours by a cold stream of air.

The Editor has often remarked upon the great variations of temperature that sometimes take place within a short period of time, during the prevalence of a chinook. It seems evident that the rapidly descending air, which is thereby warmed, is also mixed with masses of air near the ground that have not descended. Alternations of temperature of 3°, 5°, and 10°, within five minutes have been observed by himself, by Buchanan, and, doubtless others, but we know of no case where the alternation was so great as in the present instance.

NORTHERS IN THE CARIBBEAN SEA AND THE GULF OF MEXICO.

Although our West Indian service was immediately organized in view of the approaching hurricane season of 1898, yet the officials of the Weather Bureau were not unmindful of the fact that the northers in the winter season were of equal importance to the commercial shipping interests of that region. On many occasions, ever since the first predictions of November, 1871, the Editor has explained the movement of the so-called northers of Texas, and an interesting illustration of the progress of a norther over the Gulf of Mexico will be found in the MONTHLY WEATHER REVIEW for December, 1893, pages 363–364, and the accompanying Chart, No. I. Frequently the combination of a high area in the Mississippi and a low area on the Atlantic coast draws the cold air farther eastward so that it overflows a large part of Cuba. The northers of Havana have been especially studied by the officials of the Belen Observatory. We have not yet much data with regard to the progress of northers, southward over the Caribbean Sea, but the fact that severe northers occur at Colon shows that they must either proceed from high areas over the United States or else from low areas south of the Isthmus of Panama. It is to be hoped that our West Indian system will enable us to investigate this subject and predict the northers for the Isthmus of Panama as accurately as we can those for Vera Cruz, Tampico, and Havana.

RECENT EARTHQUAKES.

Sunday, August 7, at Oakland, Cal., and on Sunday, August 28, and Wednesday, August 31, at San Leandro, Cal.; both of these shocks were quite slight.

A very circumstantial account of an earthquake on Saturday morning, September 17, at Morrills Corner (described on page 415 of the September REVIEW) and North Deering, both located near Portland, Me., has been followed up by correspondence which has convinced the Editor that the whole story is a so-called fake. We can understand that political, religious, or local jealousies may suggest the publication of fakes, hoaxes, fictions, or lies, but it passes our comprehension why a respectable journal should print such matter relative to any form of natural phenomena.

Friday, October 23, at Cleveland, Ohio, three successive shocks are reported by the newspapers to have been felt during the night. Prof. E. W. Morley, of Adelbert College, Cleveland, reports several disturbances shown by the seismograph during October, caused by blasting at a point about 800 feet southwest of the instrument. Only the most powerful blasts made any record. The most vigorous movement occurred on October 29, and was probably due to some seismic disturbance. Professor Morley further reports that the seis-